

In re Patent Application of
COFLER ET AL.
Serial No. 10/082,816
Filed: FEBRUARY 25, 2002

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REMARKS

Applicants thank the Examiner for the careful and thorough examination of the present application, for correctly indicating that dependent Claims 26-29, 31-35, 37, and 39-49 recite patentable subject matter, and for extending all courtesies during a recent telephonic interview, the substance of which is discussed below.

Applicants have amended independent Claims 25, 36, and 38 to more clearly define over the prior art. Applicants have also amended dependent Claim 39 to correct a typographical error and not for reasons related to patentability.

Applicants have also added new Claim 51, which recites the subject matter of former Claims 25 and 26, indicated as being allowable; new Claim 52, which recites the subject matter of former Claims 25 and 31, indicated as being allowable; new Claim 53, which recites the subject matter of former Claims 36 and 37, indicated as being allowable; and new Claim 54, which recites the subject matter of former Claims 38 and 39, indicated as being allowable.

Based on the arguments and amendments presented herein, all claims are believed to be patentable.

I. The Claimed Invention

Amended independent Claim 25, for example, is directed a method of handling branching instructions using a processor comprising a program memory storing program instructions, and a processor core comprising a plurality of

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processing units and a central unit connected thereto. The central unit issues instructions to the processing units based upon the program instructions. The method comprises clocking the processor core with a clock signal and receiving a branching instruction in the course of a current clock cycle. Applicants have amended Claim 25 to recite the method comprises executing the received branching instruction in the course of the current clock cycle. Support for this amendment is found on page 15 of the present application.

Amended independent Claim 36 is similar to Claim 25 and has been similarly amended but does not recite clocking the processor core with a clock signal. Amended independent Claim 38 is a processor counterpart to Claim 25 and has been similarly amended.

II. The Claims Are Patentable

The present Examiner has rejected independent Claims 25, 36, and 38 over the Underwood et al. patent. The Underwood et al. patent discloses a pipeline architecture which minimizes delays incurred during execution of branching instructions. (Col. 1, lines 37-39). The Underwood et al. patent discloses that while a first instruction is executing, the opcode of the next instruction is inputted into the control unit to determine whether the next sequential address is to be fetched or whether the address contained within a branching instruction is to be fetched. (Col. 3, lines 38-42). At the beginning of the next clock cycle, the address contained within the branching instruction is ready to be

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fetched and the branching instruction is then executed. (Col. 3, lines 43-54).

The present Examiner, during the recent interview, helpfully acknowledged that the prior Examiner mischaracterized the Underwood et al. patent, and that the Underwood et al. patent indeed fails to disclose that the branching instruction is received by the central unit in the course of a current cycle of the clock signal and executed in the course of the current cycle.

Nonetheless, Applicants have amended independent Claims 25, 36, and 38 to recite "executing the received branching instruction in the course of the current clock cycle." The Underwood et al. patent discloses the branching instruction being executed in the subsequent second cycle and not in the course of the current cycle as recited in the amended claims. Accordingly, amended independent Claims 25, 36, and 38 are patentable over the prior art. Their respective dependent claims, which recite yet further distinguishing features, are also patentable over the prior art and require no further discussion herein.

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CONCLUSIONS

In view of the amendments to the claims and the arguments presented above, it is submitted that all of the claims are patentable. Accordingly, a Notice of Allowance is respectfully requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Respectfully submitted

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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number 571-273-8300 to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 this 10th day of January, 2007.

